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Iqbal Malik, Editor

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ISCHAEMIC HEART DISEASE

Cypher versus Taxus: the fight continues ► The use of sirolimus-eluting and paclitaxel-eluting stents in the treatment of de novo coronary lesions has not been compared in a prospective multicentre study to date. In the REALITY trial, 1386 patients from 90 hospitals across Europe, Latin America and Asia were randomly assigned to receive either a sirolimus-eluting (n = 701) or a paclitaxel-eluting stent (n = 685). All patients had angina pectoris and one or two de novo native coronary artery lesions in vessels of between 2.25–3.00 mm in diameter. Angiographic follow up was performed at eight months and clinical follow up at 12 months. The primary end point was in-lesion binary restenosis (defined as a luminal stenosis of more than 50%) at eight months. Secondary end points included one year rates of target lesion and vessel revascularisation and a composite end point of cardiac death, Q wave or non-Q wave myocardial infarction, coronary artery bypass grafting, or repeat target lesion revascularisation. In-lesion binary restenosis at eight months occurred in 86 patients (9.6%) with a sirolimus-eluting stent and 95 patients (11.1%) with a paclitaxel-eluting stent (relative risk (RR) 0.84, 95% confidence interval (CI) 0.61 to 1.17; p = 0.31). The mean (SD) in-stent late loss was 0.09 (0.43) mm for sirolimus eluting stents versus 0.31 (0.44) mm for paclitaxel-eluting stents (difference, −0.22 mm, 95% CI −0.26 to −0.18 mm; $p < 0.001$). For sirolimus- versus paclitaxel-eluting stents, respectively, mean in-stent diameter stenosis was 23.1% *v* 26.7% ($p < 0.001$) and the number of major adverse cardiac events at one year was 73 (10.7%) *v* 76 (11.4%) (p = 0.73). The authors conclude that a longer follow up period is needed to see if the difference in late loss between the two stents translates into significant clinical outcomes. However, as an accompanying editorial by Sorin Brener of the Cleveland Clinic points out, REALITY does not provide any data which can help us when trying to choose which stent to use in patients with long lesions, or diabetics. Furthermore, the trend towards higher stent thrombosis rates in Taxus stents does not receive special attention in the published study.

▲ Morice M-C, Colombo A, Meier B, *et al*. Sirolimus vs paclitaxel-eluting stents in de novo coronary artery lesions. *JAMA* 2006;**295**:895–904.

Pre-treatment with lysis before primary angioplasty is not a good idea ► Primary percutaneous coronary intervention (PCI) is more effective than fibrinolytic therapy for ST segment elevation acute myocardial infarction (STEMI), but time to intervention can be considerable. This was a randomised study in which patients with STEMI of less than 6 h duration (scheduled to undergo primary PCI with an anticipated delay of 1–3 h) were randomised to standard primary PCI (n = 838) or PCI preceded by administration of full dose tenecteplase (n = 829). All patients received aspirin and a bolus, without an infusion, of unfractionated heparin. The primary end point was death or congestive heart failure or shock within 90 days. Analyses were by intention to treat. Early cessation of enrolment was recommended by the data and safety monitoring board because of a higher in-hospital mortality in the facilitated than in the standard PCI group (6% (43 of 664) *v* 3% (22 of 656), p = 0.0105). Median time from randomisation to first balloon inflation was similar in both groups. The median time from bolus tenecteplase to first balloon inflation was 104 minutes. The primary end point occurred in 19% (151 of 810) of patients assigned facilitated PCI versus 13% (110 of 819) of those randomised to primary PCI (RR 1.39, 95% CI 1.11 to 1.74; p = 0.0045). During hospital stay, significantly more strokes (1.8% (15 of 829) *v* 0; $p < 0.0001$), but not major non-cerebral bleeding complications (6% (46 of 829) *v* 4% (37 of 838); p = 0.3118), were reported in patients assigned facilitated rather than standard PCI. There were more ischaemic cardiac complications, such as reinfarction (6% (49 of 805) *v* 4% (30 of 820); p = 0.0279) or repeat target vessel revascularisation (7% (53 of 805) *v* 3% (28 of 818); p = 0.0041) within 90 days in this study group.

▲ ASSENT-4 PCI Investigators. Primary versus tenecteplase-facilitated percutaneous coronary intervention in patients with ST-segment elevation acute myocardial infarction (ASSENT-4 PCI): randomised trial. *Lancet* 2006;**367**:569–78.

But there may be a role for other facilitators in primary angioplasty ► The authors identified 17 trials of patients with STEMI assigned to facilitated (n = 2237) or primary (n = 2267) PCI. Short-term outcomes (up to 42 days) of death, stroke, non-fatal reinfarction, urgent target vessel revascularisation, and major bleeding were assessed. Grade 3 flow rates for prethrombolysis and post-thrombolysis in myocardial infarction (TIMI) were also analysed. The facilitated approach resulted in a greater than twofold increase in the number of patients with initial TIMI grade 3 flow, compared with the primary approach (832 patients (37%) *v* 342 (15%); odds ratio (OR) 3.18, 95% CI 2.22 to 4.55); however, final rates did not differ (1706 (89%) *v* 1803 (88%); OR 1.19, 95% CI 0.86 to 1.64). Significantly more patients assigned to the facilitated approach than those assigned to the primary approach died (106 (5%) *v* 78 (3%); OR 1.38, 95% CI 1.01 to 1.87), had higher non-fatal reinfarction rates (74 (3%) *v* 41 (2%); OR 1.71, 95% CI 1.16 to 2.51), and had higher urgent target vessel revascularisation rates (66 (4%) *v* 21 (1%); OR 2.39, 95% CI 1.23 to 4.66); the increased rates of adverse events seen with the facilitated approach were mainly seen in thrombolytic therapy-based regimens. More research is needed on the use of other drugs, such as glycoprotein IIb/IIIa inhibitors and heparin analogues, before primary angioplasty.

▲ Keeley EC, Boura JA, Grines CL. Comparison of primary and facilitated percutaneous coronary interventions for ST-elevation myocardial infarction: quantitative review of randomised trials. *Lancet* 2006;**367**:579–88.

Haemostatic genes and coronary heart disease ► Variants of certain haemostatic genes (such as that encoding factor V Leiden) are involved in the development of venous thrombosis, but studies of such variants in coronary disease have reported apparently conflicting results. The available evidence on each comprises at least 5000 coronary disease cases and at least 5000 controls. Meta-analyses were done of 191 studies in relation to factor V G1691A (that is, factor V Leiden), factor VII G10976A, prothrombin G20210A, plasminogen activator inhibitor-1 (PAI-1) [−675] 4G/5G, and three platelet glycoprotein (GP) receptor variants (GPIa C807T, GPIbα T[−5]C, GPIIIa C1565T), involving a total of 66 155 coronary disease cases and 91 307 controls. In a combined analysis of all studies, the per-allele relative risks for coronary disease of factor V 1691A and of prothrombin 20210A were 1.17 (95% CI 1.08 to 1.28) and 1.31 (95% CI 1.12 to 1.52), respectively. Combined analyses of studies of the PAI-1 [−675] 4G variant yielded a per-allele relative risk for coronary disease of 1.06 (95% CI 1.02 to 1.10), but there was an indication of publication bias in these studies. Combined analyses of the factor VII 10976A, GPIa 807T, GPIbα [−5]C, and GPIIIa 1565T variants showed no significant overall associations with coronary disease, yielding per-allele relative risks of 0.97 (95% CI 0.91 to 1.04), 1.02 (95% CI 0.97 to 1.08), 1.05 (95% CI 0.96 to 1.13), and 1.03 (95% CI 0.98 to 1.07), respectively. The 1691A variant of the factor V gene and the 20210A variant of the prothrombin gene, both of which increase circulating thrombin generation, might each be moderately associated with the risk of coronary disease.

▲ Ye Z, Liu EHC, Higgins JPT, *et al*. Seven haemostatic gene polymorphisms in coronary disease: meta-analysis of 66 155 cases and 91 307 controls. *Lancet* 2006;**367**:651–8.

GENERAL CARDIOLOGY

AF ablation: possibly a cure? ► A total of 146 patients with a mean age of 57 (SD 9) years who had chronic atrial fibrillation (AF) were randomly assigned to receive amiodarone and undergo two cardioversions during the first three months alone (the control group) or in combination with circumferential pulmonary vein ablation. Cardiac rhythm was assessed with daily telephonic transmissions for one year. The left atrial diameter and the severity of symptoms were assessed at 12 months. Among the 77 patients assigned to undergo circumferential pulmonary vein ablation, ablation was repeated because of recurrent AF in 26% of patients and atypical atrial flutter in 6%. An intention-to-treat analysis showed that 74% of patients in the ablation group and 58% of those in the control group were free of recurrent AF or flutter without antiarrhythmic drug treatment at one year ($p = 0.05$). Among the 69 patients in the control group, 53 (77%) crossed over to undergo circumferential pulmonary vein ablation for recurrent AF by one year, and only 3 (4%) were in sinus rhythm without antiarrhythmic drug treatment or ablation. There were significant decreases in the left atrial diameter (12 (11)%, $p < 0.001$) and the symptom severity score (59 (21)%, $p < 0.001$) among patients who remained in sinus rhythm after circumferential pulmonary vein ablation. These results look very encouraging, but need to be reproduced in other centres to be valid. AF ablation can be time consuming, with significant radiation doses, and depending on technique, is also associated with complications such as cardiac tamponade and pulmonary vein stenosis.

▲ Oral H, Pappone C, Chugh A, *et al*. Circumferential pulmonary-vein ablation for chronic atrial fibrillation. *N Engl J Med* 2006;**354**:934–41.

Losing a partner can be fatal ► Anecdotal evidence suggests that if an older person's spouse goes into hospital with a serious illness, the partner often becomes ill soon after. This study of over 500 000 patients followed over nine years in Medicare in the United States confirms this. Overall, 74% of husbands and 67% of wives were hospitalised at least once, and 49% of husbands and 30% of wives died. Mortality after the hospitalisation of a spouse varied according to the spouse's diagnosis. After adjustment for measured covariates, the risk of death for men was not significantly higher after a spouse's hospitalisation for colon cancer (hazard ratio (HR) 1.02, 95% CI 0.95 to 1.09) but was higher after hospitalisation for stroke (HR 1.06, 95% CI 1.03 to 1.09), congestive heart failure (HR 1.12, 95% CI 1.07 to 1.16), hip fracture (HR 1.15, 95% CI 1.11 to 1.18), psychiatric disease (HR 1.19, 95% CI 1.12 to 1.26), or dementia (HR 1.22, 95% CI 1.12 to 1.32). For women, the various risks of death after a spouse's hospitalisation were similar. Overall, for men, the risk of death associated with a spouse's hospitalisation was 22% of that associated with a spouse's death (95% CI 17% to 27%); for women, the risk was 16% of that associated with death (95% CI 8% to 24%). Perhaps a focus on social support for the partner would help reduce the risk.

▲ Christakis NA, Allison PD. Mortality after the hospitalization of a spouse. *N Engl J Med* 2006;**354**:719–30.

Do not resuscitate orders in acutely sick patients ► Admissions from heart failure clinic and those with significant co-morbidity are the counterpoint to those admitted for aggressive treatment such as primary angioplasty. All hospitals now have ''Do not resuscitate'' forms that require discussion with patients and relatives. Although useful, it is often thought stressful for both the doctor and the patient or carer. This study of over 300 acute admissions assessed whether acutely unwell patients wished to participate in discussions about resuscitation. Of the total sample, 74 patients consented to take part in the study and provide full data. Of the remaining patients, 189 could not be approached for practical reasons and 111 did not wish to participate. Of the 74 patients who read the leaflet, 65 (88%) reported having little or no prior knowledge, 70 (96%) understood it, 56 (77.8%) preferred for resuscitation decisions to be discussed with them, and 55 (77.5%) did not mind discussing resuscitation within 24 hours of admission and overall showed a decline in their anxiety score. Many patients admitted through the emergency department for medical reasons cannot participate in their decision not to attempt resuscitation within 24 hours of admission. Patients who were willing to participate rated the information leaflet that was provided positively. The perspective of the doctor was not considered.

▲ Fidler H, Thompson C, Freeman A, *et al*. Do not attempt resuscitation in acute medical admissions: prospective, cross sectional study of a successive cohort. *BMJ* 2006;**332**:461–2.

Journals scanned

American Journal of Medicine; American Journal of Physiology: Heart and Circulatory Physiology; Annals of Emergency Medicine; Annals of Thoracic Surgery; Archives of Internal Medicine; BMJ; Chest; European Journal of Cardiothoracic Surgery; Lancet; JAMA; Journal of Clinical Investigation; Journal of Diabetes and its Complications; Journal of Immunology; Journal of Thoracic and Cardiovascular Surgery; Nature Medicine; New England Journal of Medicine; Pharmacoeconomics; Thorax

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IMAGES IN CARDIOLOGY

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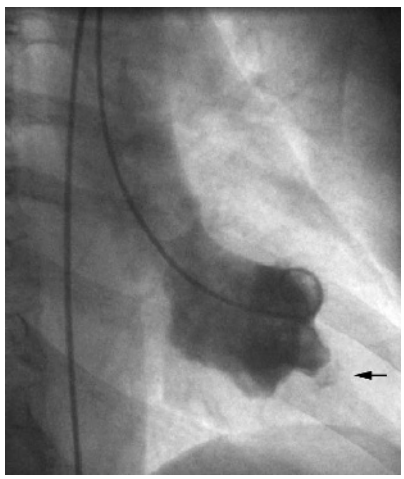
Clenched fist appearance in endomyocardial fibrosis



A 40 year old woman, while being evaluated for breathlessness on exertion, was found to have calcific plaques with partial obliteration of the cavity at the left ventricular apex on echocardiography. Ventriculography showed a polylobulated left ventricular silhouette with linear calcific shadows at the ''amputated'' apex (arrow at bottom right) giving an appearance of a clenched fist with a ring on the middle finger. The short axis dimension was more than the long axis dimension due to the apical obliteration. Fibrosis of the posterior cusp resulted in an indistinct mitral valve crescent. There was only trivial mitral regurgitation. An endomyocardial biopsy confirmed the diagnosis of endomyocardial fibrosis.

K K N Namboodiri
S Bohora
kknnamboodiri@sctimst.ac.in